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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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12/29/2005

David Roberts McMurtry

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09/25/2008

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EXAMINER

BRAINARD, TIMOTHY A

ART UNIT

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3662

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/518,918	Applicant(s) MCMURTRY ET AL.	
	Examiner TIMOTHY A. BRAINARD	Art Unit 3662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-42 and 44-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26-42 and 44-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 26-27, 29, and 35-36 are rejected under 35 U.S.C. 102(b) as being anticipated by **Chaney** (US 5056921). **Chaney (claim 26)** teaches an apparatus for measuring the straightness of a plane and one of pitch and yaw of a body with respect to another body (**abs**) comprising a transmitter unit on the first body (**fig 2 and col 3, lines 6-12**), an optic unit on the second body (**fig 2, item 6**), the transmitter directing a beam at the optical unit, at least one detector detecting at least two or more light beams (**abs and fig 2**) the displacement of the two or more light beams on the detectors enables measurement of straightness error in one plane, pitch or yaw relative to the second body and the output of one detector is used in the measurement of both straightness and roll and pitch and yaw (**fig 2 and 8 and abs**), (**claim 27**) displacement of the two or more light beams incident on the detector enables measurement on the roll error (**col 2, lines 31-35**), (**claim 29**) three light beams are detected such that pitch, roll, yaw, or straightness errors in two planes are determined (**fig 2**), (**claim 35**) the two of more light beams remain substantially parallel (**fig 2**), (**claim 36**) the light beams are collimated through out the system.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Chaney**. **Chaney** does not teach a common equation used to determine different deviations. It is expected that a common equation would be used to determine different deviations.

Claims 30-33, 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Chaney** as applied to claim 26 above, and further in view of **Beckworth** (US 4939678). **Beckworth** teaches (claim 30) optic unit is provided with two or more optical elements to reflect two or more light beams (fig 5 and col 8), (claims 31 and 33) the optical elements are retro reflectors (col 8), (claim 32) the retro reflectors are positioned side-by-side in the optical unit and a third retro reflector is positioned behind the first and second retro reflectors (fig 5 and col 8), (claims 41 and 42) the optical elements are mounted on a thermally stabilized bar to reduce movement of the optical element. It would have been obvious to modify **Chaney** to include optic unit is provided with two or more optical elements to reflect two or more light beams, the optical elements are retro reflectors, the retro reflectors are positioned side-by-side in the optical unit and a third retro reflector is positioned behind the first and second retro reflectors, the optical elements are mounted on a thermally stabilized bar to reduce movement of the optical element because each is one of multiple design choices with no new or unexpected results

Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Chaney** as applied to claim 26 above, and further in view of **Ross III** et al (US 2002/0122172). **Ross III** teaches one detector being a pixilated image sensor. It would have been obvious to modify **Chaney** to include one detector being a pixilated image sensor because it is one of multiple design choices with no new or unexpected result.

Claim 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Chaney** as applied to claim 26 above, and further in view of **Kilibjian** (US 5335548). **Kilibjian** teaches two light beams transmitted from the light source wherein the coherence pattern of the detected beams and the beams are intensity modulated to cause frequency variation to reduce the coherence pattern of the detected beams (abs). It would have been obvious to modify **Chaney** to include two light beams transmitted from the light source wherein the coherence pattern of the detected beams and the beams are intensity modulated to cause frequency variation to reduce the coherence pattern of the detected beams because each is one of multiple design choices with no new or unexpected result.

Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Chaney** in view of **Kilibjian** as applied to claim 38 above, and further in view of Inada (US 4999618). Inada teaches two light beams intensity modulated by turning the light source on and off (col 2, lines 50-55). It would have been obvious to modify **Chaney** in view of **Kilibjian** to include two light beams intensity modulated by turning the light source on and off because it is one of multiple design choices with no new or unexpected result.

Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Chaney** as applied to claim 26 above, and further in view of Qu (US 6343228). **Qu** teaches one light beam where an optical fiber separates the light source from the start of the projected light beam. It would have been obvious to modify **Chaney** to include one light beam where an optical fiber separates the light source from the start of the projected light beam because it is one of multiple design choices with no new or unexpected results.

Claims 44 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Chaney** in view of **Snyder** (US 3552859). **Chaney** teaches (**claim 44**) a method for measuring deviation in the movement of a first body with respect to a second body, using a transmitter unit which outputs at least one light beam and an optic unit, wherein one of the transmitter unit and the optic unit is provided with one or more detector to detect one or more light beam transmitted to or reflected from the optic unit, the method comprising the steps of: mounting the transmitter unit on the first body; mounting the optic unit on the second body; determining the position of the light beam on the detector (**abs and fig 2 and 8**). **Chaney** does not teach adjusting automatically at least one of a position of the transmitter unit and a movement vector of the second body in response to feedback from the determined position of the light beam on the detector in order to maintain the light beam on the detector during relative movement of the first and second bodies and the feedback is used to maintain the light beam on a predetermined part of the detector. **Snyder** teaches (**claim 44 and 46**) adjusting automatically at least one of a position of the transmitter unit and a movement vector of the second body in response

to feedback from the determined position of the light beam on the detector in order to maintain the light beam on the detector during relative movement of the first and second bodies and the feedback is used to maintain the light beam on a predetermined part of the detector (**col 8, lines 18-64**). It would have been obvious to modify **Chaney** to include adjusting automatically at least one of a position of the transmitter unit and a movement vector of the second body in response to feedback from the determined position of the light beam on the detector in order to maintain the light beam on the detector during relative movement of the first and second bodies and the feedback is used to maintain the light beam on a predetermined part of the detector because it would automate the alignment means so the operator would not have to align it by hand.

Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Chaney** in view of **Snyder** as applied to claim 44 above, and further in view of **Beckworth**. **Beckworth** teaches the transmitter unit is mounted on an adjustable base unit which is mounted on the first body and wherein the position of the transmitter unit is adjusted by adjusting the adjustable base unit (col 1, lines 22-36). It would have been obvious to modify **Chaney** in view of **Snyder** to include the transmitter unit is mounted on an adjustable base unit which is mounted on the first body and wherein the position of the transmitter unit is adjusted by adjusting the adjustable base unit because it is one of multiple design choices with no new or unexpected result.

Response to Arguments

Applicant's arguments with respect to claims 26-46 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIMOTHY A. BRAINARD whose telephone number is (571) 272-2132. The examiner can normally be reached on Monday - Friday 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on (571) 272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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TAB

/Thomas H. Tarcza/
Supervisory Patent Examiner, Art Unit 3662